ROUTE 21 SB VIADUCT AND CHESTER AVENUE BRIDGE

CITY OF NEWARK ESSEX COUNTY, NEW JERSEY

BRIDGE REHABILITATION, SUPERSTRUCTURE REPLACEMENT, AND PAVEMENT RECONSTRUCTION



Pre-Bid Presentation May 17, 2013





UTILITIES

PUBLIC SERVICE ELECTRIC & GAS (ELECTRIC)

VERIZON-NEW JERSEY. INC. (TELEPHONE)

VERIZON BUSINESS (MCI COMMUNICATIONS) (TELEPHONE)

AT&T COMMUNICATIONS (TELECOMMUNICATIONS)

PUBLIC SERVICE ELECTRIC & GAS (GAS)
CITY OF NEWARK (WATER AND SANITARY SEWER)

PASSAIC VALLEY SEWER COMMISSION (SANITARY SEWER MAIN NORFOLK SOUTHERN CORPORATION (N.S.R.R.)



State of New Jersey Department of Transportation

PLANS OF

ROUTE 21 SB VIADUCT AND CHESTER AVENUE BRIDGE CONTRACT NO. 004950250

BRIDGE REHABILITATION, SUPERSTRUCTURE REPLACEMENT, AND PAVEMENT RECONSTRUCTION

ESSEX COUNTY

CITY OF NEWARK

BRIDGES IN THIS CONTRACT			
NO.	DESCRIPTION	STRUCTURE #	
1	RTE.21 SOUTHBOUND OVER RTE.21 NORTHBOUND	0716-150	
2	RTE.21 NORTHBOUND OVER CHESTER AVENUE	0716-151	
3	RTE.21 SOUTHBOUND OVER CHESTER AVENUE	0716-152	

٧	WALLS IN THIS CONTRACT		
NO.	DESCRIPTION		
1	RETAINING WALL NO. 1		
2	RETAINING WALL NO. 2		
3	RETAINING WALL NO. 3		

DESIGN TR	AFFIC	DATA
A.D.T. (2010) - 2 WAY	=	53,900 VPD
A.D.T. (2030) - 2 WAY	=	60,300 VPD
D.H.V. (2030) - 2 WAY	=	5,500 VPH
D	=	56 %
Т	-	1.2 %
V	=	50 M.P.H.

PROJECT CATEGORIES	MAJOR/UNUSUAL	SCALES AS INDICATED	MAY 2013	C.S. 0716
	COMME UNALA	UNITY OF ASSEX CITY OF NEWARK MINISTRUMENT OF THE PROPERTY O	BELLEVILLE TOWNSHIP BEND FEDERAL PROJECT NO BROOKS(130) THE 21 & SAL224-82.600K TOWN OF HUDSON BEOLULE STAL264-00 KEARNY TOWN OF HUDSON BEOLULE STAL264-02 WE WARK TOWN OF HARRISON	
HIGHWAY TYP	E - FP	WEV AA	1 P	

INDEX OF SHEETS

SHEET DESCRIPTION

	INDEX OF SHEETS	
	SHEET NO.	DESCRIPTION
	1	KEY
	2-3	ESTIMATE - DISTRIBUTION OF QUANTITIES
PART	4-9	TYPICAL SECTIONS
1	10-15	CONSTRUCTION PLANS
	16-19	UTILITY CONSTRUCTION PLANS
	20	ENVIRONMENTAL PLAN
	21-23	PROFILES
	24-27	TIES
	28-30	GRADES
	31-61	TRAFFIC CONTROL AND STAGING PLANS
	62-69	HIGHWAY LIGHTING PLANS
PART	70-72	HIGHWAY LIGHTING DETAILS
2	73	ITS PLANS
	74-79	ITS DETAILS
	80-81	TRAFFIC STRIPING AND SIGNING PLANS
	82-96	CONSTRUCTION DETAILS
N. HIMMESSENIC	97	KEY PLAN STRUCTURE
PART	98	ESTIMATE OF QUANTITIES - BRIDGE
3	99-219	BRIDGE PLANS

STANDARD ROADWAY CONSTRUCTION - TRAFFIC CONTROL - BRIDGE CONSTRUCTION DETAILS BOOKLET 2007, AND STANDARD ELECTRICAL DETAILS BOOKLET, 2007, ARE APPLICABLE TO THIS PROJECT EXCEPT FOR THOSE DETAILS CONTAINED HERRIN.

MID-POINT OF PROJECT LONGITUDE : 74° 09′ 42.88″ W LATITUDE : 40° 45′ 49.02″ N

KEY MAP

1320' 2640' 3960' 5280

TOTAL LENGTH OF THE PROJECT = 3570 LIN. FT. OR 0.68 MILES
TOTAL LENGTH OF FEDERAL PROJECT NO. BR-0045(133) = 3570 LIN. FT. OR 0.68 MILES

2007 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION TO GOVERN

Submitted by

Director, Division of Project Management

Approved by

State Transportation Engineer

Date

219



Construction - Summer 2013 through Winter 2016

SCOPE OF WORK

Roadway

Northbound Pavement Reconstruction
Inlet and Manhole Reconstruction
Safety – Guide Rail
Highway Lighting
Pavement – Mill and Pave

Mount Pleasant Cemetery
Caution Fence
Trimming
Landscape Planting

Norfolk Southern Railroad
Construction Access
Siding Work by RR
Fiber Optic Line



STRUCTURES

Viaduct

Rehabilitation of Deck and Parapet

Drainage System Replacement

Bearing Replacement

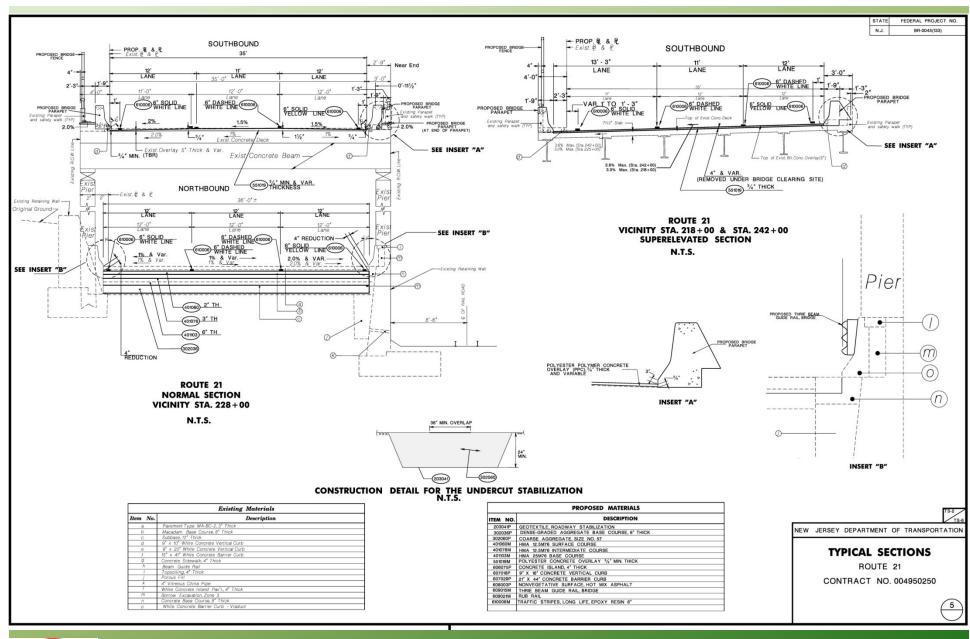
Beam Repair and Tub Girder Installation

Retaining Wall – Ground Anchors

Bridges Over Chester Avenue

Superstructure Replacement







TYPICAL SECTION - VIADUCT

STAGE CONSTRUCTION

Northbound Pavement Reconstruction Stage A & B

Pre-Stage Preliminary Structural Work

Stage 1A Right/Left Side Work Area

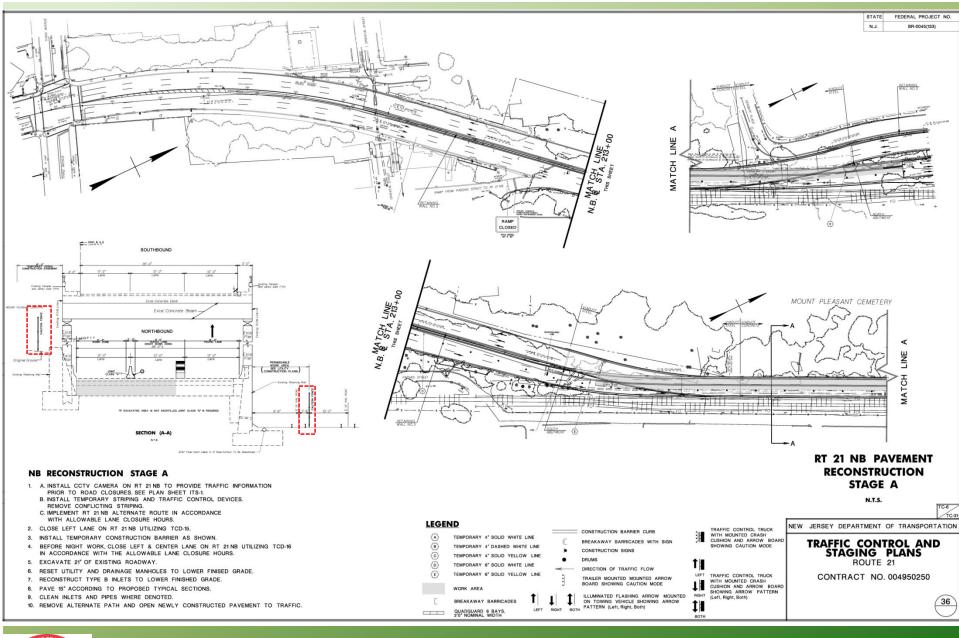
Stage 1B Right/Left Side Work Area

Stage 2 Center Lane Work Area

Stage 3 Right/Left Side Work Area

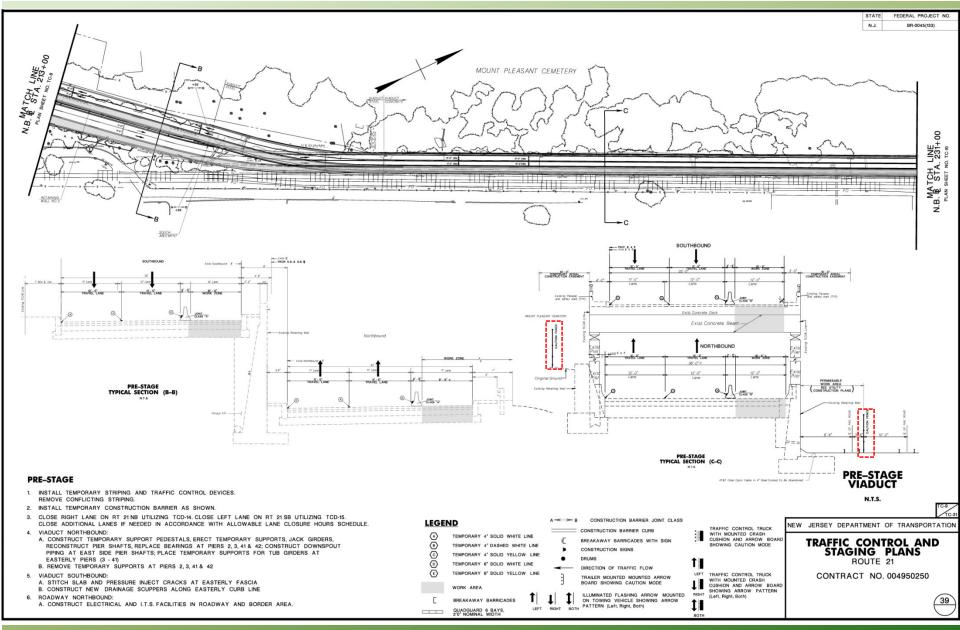
Stage 4 Final Roadway Work







NB PAVEMENT RECONSTRUCTION





PRE-STAGE

TRAFFIC CONTROL

Allowable Lane Closure Hours

Viaduct

Northbound Alternate Route

Northbound Detour/Closure

Southbound 15-Minute Closures

Bridges Over Chester Avenue

Route 21 Southbound Ramp to Chester Avenue Detour

Route 21 Southbound and Northbound 15-Minute Closures



Chester Avenue 15-Minute Closures (Under Route 21)

1 1 1

†# 1# ‡#

PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED)

ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE

ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE

TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND

TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND

ARROW BOARD SHOWING ARROW PATTERN (Left, Right, Both)

PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE

TEMPORARY CRASH CUSHION INERTIAL BARRIER SYSTEM

TEMPORARY CRASH CUSHION, (all other approved)

THE CONTRACTOR SHALL REFER TO TCD-10F THE STANDARD ROADWAY CONSTRUCTION - TRAFFIC CONTROL - BRIDGE CONSTRUCTION DETAILS BOOKELT 2007 AND SUBSEQUENT REVISIONS ISSUED PURSUANT TO BC06D-01 BDC10D-03, AND BDC12D-04 FOR GENERAL NOTES APPLICABLE TO THIS PROJECTION.

THE PROPOSED WORK MUST BE COORDINATED WITH ANY OTHER PROJECTS THAT MAY BE UNDERWAY AT THE SAME TIME NEAR THE PROJECT AREA.

LOCATION AND MESSAGE OF VARIABLE MESSAGE SIGNS (VMS) TO BE DETERMINED BY TRAFFIC OPERATIONS-NORTH. ANY ADDITIONAL VMS'S TO BE INSTALLED IN THIS CONTRACT SHALL BE ON AN IF AND WHERE DIRECTED BASIS AS DETERMINED BY TRAFFIC OPERATIONS-NORTH.

WHENEVER TEMPORARY STRIPING IS TO BE PLACED ON CONSTRUCTION BARRIER (ALL STAGES), TEMPORARY PAVEMENT MARKING TAPE WILL BE UTILIZED.

SHOWING ARROW PATTERN (Left, Right, Both)

ARROW BOARD SHOWING CAUTION MODE

BREAKAWAY BARRICADES

CONSTRUCTION SIGNS

SHOWING CAUTION MODE

FLAGGER

BUFFER ZONE

WORK AREA

GENERAL NOTES:

TEMPORARY PAVEMENT MARKING TAPE

BREAKAWAY BARRICADES WITH SIGN

PROJECT SPECIFIC NOTES:

MONDAY THROUGH THURSDAY 6:00 AM TO 10:00 PM SUNDAY 8:00 AM TO 10:00 PM

ONE LANE MAINTAINED (TWO LANES CLOSED)

MONDAY THROUGH THURSDAY 10:00 PM TO 6:00 AM (NEXT DAY) SATURDAY 10:00 PM TO 8:00 AM (SUNDAY) SLINDAY 10:00 PM TO 6:00 AM (MONDAY)

RT. 21 SB (THREE TRAVEL LANES)

TWO LANES MAINTAINED (ONE LANE CLOSED

SATURDAY 7:00 AM TO 10:00 PM

ONE LANE MAINTAINED (TWO LANES CLOSED)

10:00 PM TO 5:00 AM (NEXT DAY) 10:00 PM TO 7:00 AM (SATURDAY) 10:00 PM TO 8:00 AM (SUNDAY) 10:00 PM TO 5:00 AM (MONDAY)

WHEN THERE IS AN EVENT AT THE PRUDENTIAL CENTER, NEW JERSEY PERFORMING ARTS CENTER, OR RED BULL ARENA, ROUTE 21 MAY NOT BE CLOSED OR REDUCED TO SINGLE LANE TRAFFIC FROM TWO (2) HOURS BEFORE THE EVENT UNTIL ONE (9) HOUR AFTER THE END OF THE EVENT.

WHEN THERE IS AN EVENT AT METLIFE STADIUM, ROUTE 21 MAY NOT BE CLOSED OR REDUCED TO SINGLE LANE TRAFFIC FROM FOUR (4) HOURS BEFORE THE EVENT UNTIL TWO (2) HOURS AFTER THE END OF THE EVENT.

FROM TEN (10) DAYS BEFORE THE SUPER BOWL GAME UNTIL TWO (2) DAYS FOLLOWING ROUTE 21 MAY NOT BE CLOSED OR REDUCED TO SINGLE LANE TRAFFIC.

ADVANCE NOTICE SHALL BE GIVEN TO THE CITY OF NEWARK MANAGER OF DIVISION OF TRAFFIC AND SIGNALS TWO (2) WEEKS PRIOR TO ANY ALTERNATE ROUTE, DETOUR OR ROAD CLOSURE BEING IMPLEMENTED.

CONTACT INFORMATION: JACK NATA (973) 733-3985 NATAJ@CI.NEWARK.NJ.US

ROUTE 21 NB ALTERNATE ROUTE

A. UNLESS APPROVED BY THE RE, ROUTE 21 NB WILL REMAIN OPEN TO TWO (2) LANE TRAFFIC EXCEPT DURING THE FOLLOWING OPERATION: PAVEMENT RECONSTRUCTION OF ROUTE 21 NB

B. MOTORISTS WILL BE PROVIDED TWO (2) WEEKS NOTICE OF THE ROUTE 21 NB ALTERNATE ROUTE VIA SIGN A.

C. THE ALLOWABLE ONE (1) LANE TRAFFIC HOURS FOR ROUTE 21 NB PAVEMENT RECONSTRUCTION ARE: MONDAY - THURSDAY 8:00 PM TO 6:00 AM (NEXT DAY)

A. UNLESS APPROVED BY THE RE, ROUTE 21 NB WILL REMAIN OPEN TO TRAFFIC EXCEPT DURING THE FOLLOWING OPERATION: STRUCTURAL WORK UNDER VIADUCT (ERECTION OF TUB GIRDERS, INSTALLATION OF TRANSVERSE AND VERTICAL DRAINAGE PIPES, REMOVAL OF SCUPPERS)

B. MOTORISTS WILL BE PROVIDED TWO (2) WEEKS NOTICE OF THE ROUTE 21 NB CLOSURE VIA SIGN B.

C. THE ALLOWABLE COMPLETE CLOSURE HOURS FOR ROUTE 21 NB STRUCTURAL WORK UNDER VIADUCT ARE:

MONDAY - THURSDAY 10:00 PM TO 5:00 AM (NEXT DAY)

A. UNLESS APPROVED BY THE RE, ROUTE 21 SB WILL REMAIN OPEN TO TRAFFIC EXCEPT DURING THE FOLLOWING OPERATIONS:

2. LOWERING OF TUB GIRDERS ON NEW BEARINGS B. THE ALLOWABLE COMPLETE CLOSURE HOURS FOR ROUTE 21 SB ARE:

MONDAY - THURSDAY 10:00 PM TO 5:00 AM (NEXT DAY)

FRIDAY 10:00 PM TO 7:00 AM (SATURDAY) SATURDAY 10:00 PM TO 8:00 AM (SUNDAY) SUNDAY 10:00 PM TO 5:00 AM (MONDAY)

C. STOPPED TRAFFIC SHALL BE ALLOWED TO FLOW FREELY TO THE SATISFACTION OF THE RE BETWEEN SUCCESSIVE 15 MINUTE ROAD CLOSURE PERIODS.

RAMP FROM PASSAIC STREET TO ROUTE 21 NB

UPON APPROVAL BY THE RE, THE RAMP FROM PASSAIC STREET TO ROUTE 21 NB SHALL BE CLOSED FOR THE DURATION OF THE PROJECT.

ROUTE 21 SB RAMP TO CHESTER AVENUE DETOUR

A. UNLESS APPROVED BY THE RE, THE ROUTE 21SB RAMP TO CHESTER AVENUE SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES EXCEPT DURING THE FOLLOWING:

1. GROUND ANCHOR INSTALLATION FOR RETAINING WALL NO. 1

B. MOTORISTS WILL BE PROVIDED TWO (2) WEEKS NOTICE OF THE CLOSURE OF ROUTE 21 SB RAMP TO CHESTER AVENUE VIA SIGN C.

C. THE ALLOWABLE COMPLETE CLOSURE HOURS FOR ROUTE 21 SB RAMP TO CHESTER AVENUE ARE:

ROUTE 21 NB & SB CLOSURE - VICINITY OF BRIDGES OVER CHESTER AVENUE (15 MINUTES)

A. UNLESS APPROVED BY THE RE, ROUTE 21 NB & SB IN THE VICINITY OF THE BRIDGES OVER CHESTER AVENUE WILL REMAIN OPEN TO TRAFFIC EXCEPT DURING THE FOLLOWING: 1 INSTALLATION OF SHIELDING & DEMOLITION

B. MOTORISTS WILL BE PROVIDED TWO (2) WEEKS NOTICE OF THE TEMPORARY CLOSURE OF ROUTE 21 NB VIA SIGN A, AND ROUTE 21 SB VIA SIGN B.

C. THE ALLOWABLE COMPLETE CLOSURE HOURS FOR ROUTE 21 NB & SB IN THE VICINITY OF THE BRIDGES OVER CHESTER AVENUE ARE:

MONDAY - THURSDAY 10:00 PM TO 5:00 AM (NEXT DAY) AND ARE LIMITED TO A MAXIMUM OF 15 MINUTE DURATIONS

CHESTER AVENUE CLOSURE - UNDER ROUTE 21 NB & SB (15 MINUTES)

A. UNLESS APPROVED BY THE RE, CHESTER AVENUE UNDER ROUTE 21 NB & SB WILL REMAIN OPEN TO TRAFFIC EXCEPT DURING THE FOLLOWING:

1 INSTALLATION OF SHIFLDING & DEMOLITION 2 REMOVAL & ERECTION OF GIRDERS

B. MOTORISTS WILL BE PROVIDED TWO (2) WEEKS NOTICE OF THE TEMPORARY CLOSURE OF CHESTER AVENUE VIA SIGN D & SIGN E.

C. THE ALLOWABLE COMPLETE CLOSURE HOURS FOR CHESTER AVENUE UNDER ROUTE 21 NB & SB ARE:

MONDAY - THURSDAY 10:00 PM TO 5:00 AM (NEXT DAY) AND ARE LIMITED TO A MAXIMUM OF 15 MINUTE DURATIONS

D. STOPPED TRAFFIC SHALL BE ALLOWED TO FLOW FREELY TO THE SATISFACTION OF THE RE BETWEEN SUCCESSIVE 15 MINUTE ROAD CLOSURE PERIODS.

NO LANE CLOSURES WILL BE PERMITTED ON THE FOLLOWING HOLIDAY:

* JULY 4TH (SEE NOTE)

* EASTER SUNDAY (INCUDING 6:00 AM SATURDAY UNTIL NOON MONDAY)

* LABOR DAY (SEE NOTE)

* ELECTION DAY (6:00 AM UNTIL 8:00 PM THE DAY OF)

* THANKSGIVING DAY (SEE NOTE) * CHRISTMAS DAY (SEE NOTE)

* NEW YEAR'S DAY (SEE NOTE)

IF HOLIDAY FALLS ON	NO LANE CLOSURES PERMITTED
SUNDAY OR MONDAY	6:00 AM FRIDAY UNTIL NOON TUSEDAY
TUESDAY	6:00 AM FRIDAY UNTIL NOON WEDESDAY
WEDNESDAY	6:00 AM TUESDAY UNTIL NOON THURSDAY
THURSDAY	6:00 AM WEDNESDAY UNTIL NOON MONDAY
FRIDAY OR SATURDAY	6:00 AM THURSDAY UNTIL NOON MONDAY
SUNDAY OR MONDAY TUESDAY WEDNESDAY THURSDAY	6:00 AM FRIDAY UNTIL NOON TUSEDAY 6:00 AM FRIDAY UNTIL NOON WEDESDAY 6:00 AM TUESDAY UNTIL NOON THURSDAY 6:00 AM WEDNESDAY UNTIL NOON MONDAY

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND STAGING **PLANS**

ROUTE 21

CONTRACT NO. 004950250





Allowable Lane Closure Hours

SIGNIFICANT MEASURES

Work Site Constraints (108.04)

Limited Closures (108.10)

Liquidated Damages

Traffic Control Before, During, and After Special Events at Local Venues



SPECIAL PROVISIONS

108.04 WORK SITE AND STORAGE

THE FOLLOWING IS ADDED:

Mount Pleasant Cemetery

The Contractor shall not walk on or place tools, materials, and equipment on Mount Pleasant Cemetery grounds except for the following:

- 1. Landscape Planting on Cemetery Grounds
- 2. Construction Fence

The Contractor is advised that a 10' temporary aerial work area over Cemetery grounds and adjacent to the westerly parapet, as shown on the Traffic Control and Staging Plans, is provided to facilitate the following:

- 1. Clearing of Site Vegetation in Vicinity of Parapet
- 2. Placement of Scafolding for Safety Work Area Adjacent to Parapet
- 3. Removal of Existing Parapet
- 4. Placement of Proposed Parapet & Fence
- 5. Viaduct Rehabilitation

The Contractor is advised that a 3.25' construction and maintenance easement area exists beyond the existing Right of Way line which is located at the face of the existing bridge columns and parapet.

Norfolk Southern Railroad

The Contractor is advised that a permissible work area parallel to and adjacent to the east side of the Viaduct on railroad property, as shown on the Utility Construction Plan and the Traffic Control and Staging Plans, is provided to facilitate the Viaduct Rehabilitation Work.

The Contractor is advised that a 10' temporary aerial work area over railroad property is provided to facilitate the following:

- 1. Placement of Scafolding for Safety Work Area Adjacent to Parapet
- 2. Removal of Existing Parapet
- 3. Placement of Proposed Parapet
- Viaduct Rehabilitation



SPECIAL PROVISIONS

108.10 CONTRACT TIME

- A. Complete all work required for NB Pavement Reconstruction (Stage A & B) so traffic does not have to be reduced to one lane on Route 21 Northbound corridor for more than three (3) weekends and ten (10) nights.
- B. Complete all work required for Viaduct Structural Work (Installation and Jacking of Tub Girders / Stage 1A & 1B) so traffic does not have to be closed in the NB direction on Route 21 for more than sixteen (16) weekends and sixty (60) nights.
- C. Complete all work required for Viaduct Structural Work (Pier Reconstruction and Bearing Replacement / Stage 1A & 1B) so traffic does not have to be reduced to one lane on Route 21 northbound corridor for more than six (6) weekends and forty (40) nights.
- D. Complete all work required for Ground Anchor Installation for Retaining Walls No. 1 and No. 2 so the Route 21 Southbound Ramp to Chester Avenue and Riverside Avenue does not have to be closed for more than two (2) weekends and six (6) days for each wall.
- E. Complete all work required for Substantial Completion on or before November 4, 2016.
- F. Achieve Completion on or before January 3, 2017.

